25X1 [redacted]

FIFTH MONTHLY NARRATIVE REPORT

15 December 1965

REFERENCE

25X1 [redacted]

25X1 [redacted] Job No. 645

REPORTING INTERVAL

10 November 1965 - 10 December 1965

OBJECTIVE

The objectives of this program are to define the operational objectives for automatic screening of photographic intelligence data; to study, test, and evaluate the techniques applicable to the problem; and to generate a design for an operational prototype system. Extensive experimentation on existing scanning and processing equipment, coupled with computer simulations of recognition systems, will be used to test the feasibility of several schemes. The final system design will be based upon the results of the techniques study and the operational objectives defined in the program.

STATUS OF ACTIVITIES AND ACCOMPLISHMENTS

During the reporting period, work continued on the areas delineated in the last report until the 3 December program-

25X1 review at [redacted] by the sponsor. It was suggested at the review that emphasis be placed on the evaluation of the Integral Scanner.

To permit such emphasis, work on defining military uses of automatic and semi-automatic pattern recognition, the Visual Intelligence Array, and a complete pattern-recognition system was discontinued. Our effort will now be limited to conducting experiments with the integral scanning equipment and programming associated computer programs.

During the reporting period, an ADALINE adaptive program using 400 D-cell inputs was written for the SDS 925, and a tape conversion routine was written for the G-15. Visual imagery has always been needed to support the effort, and an extensive testing program will quickly exhaust our data base. Several potential sources were investigated during the reporting period.

One source of imagery is the 665A management office at Wright-Patterson AFB, Ohio; a second potential source is USA Personnel Research Office at Ft. McNair, D. C. Ideally, some quality measure should be assigned to the imagery, but this is far beyond the scope of this program. Thus, imagery of differing complexity is being added, on the basis of subjective determinations, to our data base. Simple shapes will be used in generating pure signals for testing purposes, thereby increasing our understanding of variations in performance. The more complex imagery will be used to determine actual system performance with reconnaissance imagery. This test will simulate a screening mode of operation.

A modification is being made to the time-domain processor so that the output of the device is recorded on paper tape automatically rather than manually as was done previously.

DIFFICULTIES ENCOUNTERED

The lack of exemplary imagery still limits the program. However, several potential sources are being investigated.

TECHNICAL AGREEMENTS MADE

Emphasis is to be placed on the evaluation of the Integral Scanner.

PROGRAM FOR NEXT INTERVAL

During the next reporting period, emphasis will be placed on experimentation with existing equipment, the development of more diagnostic tools, the continuing search for imagery, and the final design of an all-electronic scan incorporating a TV raster, a rotating TV raster, and an electronic integral scan.

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